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Wisconsin Department of Commerce

Evaluation # 200518-I Revised

Safety & Buildings Division
201 West Washington Avenue
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Wisconsin Building Products Evaluation

Material	Metal Faced Foam Insulated Wall and Ceiling Panels
Manufacturer	Hylsa S.A. de CV DSC Galvamet Guerrero Nte. 151 Colonia, Cuauhtemoc, C.P. 66452 San Nicolas de los Garza, N.L. 66450 Mexico R.F.C. HYL 850731 H2A

SCOPE OF EVALUATION

GENERAL: This report evaluates the use of polyisocyanurate foam plastic material in metal faced wall and ceiling panels, manufactured by Hylsa SA de CV DSC Galvamet.

The **IBC** requirements below in accordance with the current **Wisconsin Amended ICC Code:**

- **Foamed–in-place Polyisocyanurate Core:** The Galvamet Galvatherm polyisocyanurate foam plastic sandwich panel was evaluated under the foam plastic requirements in accordance with **ss. IBC 2603.1, 2603.2, 2603.3 Exception 4, 2603.4.1.3, 2603.5.2** and **2603.7.**
- **Wall and Ceiling Panel:** The Galvamet Galvatherm polyisocyanurate foam plastic sandwich panel was evaluated as an insulated wall and ceiling panel used in walk-in coolers and freezers in accordance with **ss. IBC 2603.4.1.2, 2603.4.1.3, 2603.5.2** and **2603.7.**

DESCRIPTION AND USE

The Galvamet Galvatherm polyisocyanurate foam plastic sandwich panels include: 1) Galvatherm Shadowline profile panel used in interior partition walls or exterior walls of buildings and soffits; 2) Galvatherm Mesa panel is used on exterior walls on industrial and cold storage facilities; 3) Galvatherm Microrib used on exterior walls of buildings; and Galvatherm Stucco Wall an exterior wall panel.

Galvamet Galvatherm panel thicknesses are 2", 2.5", 3", 4", 5" and 6". Galvatherm Shadowline and Galvatherm Mesa panel lengths are 8 feet minimum to 50 feet maximum. Galvatherm Microrib and Galvatherm Stucco Wall panel lengths are 8 feet minimum to 40 feet maximum. All panel widths are 40 inches.

Galvatherm Shadowline, Galvatherm Mesa, and Galvatherm Microrib panels have concealed clip off set tongue and groove joint configurations. Galvatherm Stucco Wall has a set tongue and groove joint configuration.

The Galvamet Galvatherm Shadowline, Mesa, Microrib and Stucco Wall panel metal facings consists of: exterior 26 gauge galvanized and pre-painted steel (22 and 24 guage upon request) interior 26 gauge galvanized and pre-painted steel. Coatings on the panels consists of: exterior PVDF polymer 70% Kynar 500/Hylar 5000 or Siliconized polyester, interior Siliconized polyester (PVC Plastisol upon request).

TESTS AND RESULTS

Factory Mutual FMRC Standard 4880 testing to a maximum height of 30 feet was conducted on the Galvamet Galvatherm Shadowline, Mesa, Microrib and Stucco Wall panels up to 6 inch thick maximum. Tests conducted included: ASTM D482, ASTM D1622, ASTM D1929, and ASTM E84.

The Factory Mutual FMRC Standard 4880 test showed the panels in and of themselves would not create a need for automatic sprinklers and that the panels would be acceptable in a combustible occupancy protected by automatic sprinklers as defined by FMRC Loss Prevention Standards.

Factory Mutual also tested in accordance with ASTM E84: flame spread index 25 and smoke-development index 280.

Center For Applied Engineering, Inc., also did thermal performance testing in accordance with:

SUMMARY OF TEST RESULTS

Galvamet Polyisocyanurate (PIR) Thermal Insulation

ASTM Test Method	Thermal Properties	Results		
C 236	Thermal Performance using Guarded Hot Box	1.5"	3.0"	5.0"
	Thermal Resistance, h ft^2 °F/Btu	10.8	24.6	43.2
C 518	Thermal Transmission using Heat Flow Meter			
	Thermal Resistance, h ft^2 °F/Btu		16.47	
	Thermal Conductivity, Btu in/h ft^2 °F		0.123	
ASTM Test Method	**Physical Properties**	**Results**		
C 421	Friability mass loss, %		20.15	
D 1621	Compressive Strength			
	psi at 10% deflection or yield,			
	parallel to rise		16.3*	
	perpendicular to rise		25.7*	
D 1622	**Density**			
	lbs/ft^3		2.07	
D 1623	**Tensile Strength**			
	Tensile strength, psi		20.1	
	Elongation, %		5.4	
D 2856	**Closed Cell Content, %**		90.31%	
ASTM E84	**Surface Burning Characteristics**			
	Flame Spread Index		28	
	Smoke Development Index		147	

* Results from second set of samples submitted after processing improvements were implemented.

Testing on the Galvamet Galvatherm Shadowline, Mesa, Microrib and Stucco Wall panels up to 6 inch thick maximum, was conducted in accordance with flammability characterization and small scale identification testing in accordance with ASTM D482, ASTM D1622, ASTM D1929, ASTM E84 and ASTM E711 of polyisocyanurate foam core removed from the above roof/ceiling panels. UBC 26-3 (formerly 17-5) room fire test of finished insulated wall and roof/ceiling panels were conducted under report number J.I. 0Y2A0.A.M. Potential for fire spread above the roof panels, simulated wind uplift pressure and resistance foot traffic and hail damage testing were conducted previously and reported under J.I. 1B3A6.AM and Project ID 3003475. A 50 foot FM Approvals Corner Test of finished insulated wall and roof/ceiling panels was conducted and reported under Project ID 3009047.

The above testing resulted in the Galvamet Galvatherm Shadowline, Mesa, Microrib and Stucco Wall panels up to 6 inch thick maximum, meet the requirements for Class 1 insulated wall and ceiling panels and Class 1 roof panels when installed as indicated in the Hylsa S.A. de C.V. DSC Galvamet listing with FM.

Test data is on file with the department.

LIMITATIONS OF APPROVAL

The **IBC** limitations below are in accordance with the current **Wisconsin Amended ICC Code:**

- **Wall and Ceiling Panel: Section IBC 2603.7** allows the use of Galvamet Galvatherm Mesa freezer panels **without** a thermal barrier and automatic sprinkler system based on diversified tests, to a maximum height of 50'-0" and 6 inch thickness as required under **s. IBC 2603.4.1.3** and **s. IBC 2603.5.2**.

This approval will be valid through December 31, 2010, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The product approval is applicable to projects approved under the current edition of the applicable codes. This approval may be void for project approvals made under future applicable editions. The Wisconsin Building Product Evaluation number must be provided when plans that include this product are submitted for review.

DISCLAIMER

The department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement not specified in this document.

Revision Date: January 9, 2006
Approval Date: November 9, 2005 By: _____

Lee E. Finley, Jr.
Product & Material Review
Integrated Services Bureau

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